Applicants respectfully traverse the rejection of their claims. Applicants submit that the declarations which were submitted are proper and that they effectively remove Mentz et al. as a reference. The claims in this application are not directed to the same invention as those granted to Mentz et al. and do not evidence overlapping scope with the Mentz et al. claims.

The Mentz et al. patent contains nine claims, including two independent claims (1 and 6) and seven dependent claims. Independent claim 1 of that patent is limited to a method in which an embossing shim is formed by electroforming nickel in a hardening bath, and in which the shim so formed is pressed against the surface of an unheated aluminum can to transfer a hologram to the can. Independent claim 6 is similar to claim 1 except that it more broadly states pressing the shim against an unheated aluminum substrate to transfer the hologram. The patent describes an aluminum substrate in column 11, lines 42-47 as "characterized as an ironed, topless aluminum can...." See also column 10, lines 33-45.

The Mentz et al. patent discloses in Fig. 4 and column 7, lines 28-49, a technique in which a shim is used to impress a pattern of lands and grooves into a surface of a tool substrate 18. The intermediate tool substrate 18 "can be of any suitable substrate material, e.g., metal such as steel, or a suitable ceramic, composite, or plastic."

While the Mentz et al. patent discloses a technique in which a shim is used to form an intermediate tool, the claims in Mentz et al. do not cover such technique. An "aluminum substrate" as covered by claims 6-9 of Mentz et al. does not include a "tool substrate" as described in the patent. The Mentz et al patent nowhere attempts to include a tool substrate within the scope of an "aluminum substrate". Applicants attempted to obtain a file history of the Mentz et al. patent to confirm their understanding of the meaning of "aluminum substrate" as used in the claims, but was informed that the file history is lost in Group 1700 in the United States Patent and Patent Office.

In contrast with the claims in Mentz et al., all the claims in the present application are limited to methods which use dies or print rolls/cylinders to form a holographic image in the surface of a metal article. Applicants' claims 1-15 are all specifically limited to transferring a holographic pattern from a shim to a die or metal die. The claims do not cover pressing the shim directly against an "aluminum substrate" as

defined by Mentz et al. Applicants' claims 16-25 are all limited to the use of a cylindrical print cylinder having a holographic image in its surface to form the image into a can body (claims 16-21) or sheet metal (claims 22-25). Applicants' specification describes a print cylinder/roll as a metal roll to which a holographic image has been transferred into its surface from a shim. See page 9, beginning at line 14, to page 12, line 12. A "print cylinder" is not described and does not include a support cylinder 12 having a shim 10 secured on its surface as by clamps 17, as is described in Mentz et al.

It is seen from the above that Applicants' claims and the Mentz et al claims are not overlapping. Applicants' claims all require an intermediate die or print cylinder, and the Mentz et al. claims all transfer images directly from a shim into an aluminum can or an aluminum substrate, which is not a die. Thus, Applicants' declarations are proper and remove the Mentz et al. patent as a reference. Applicants also note that, if the USPTO considered the Mentz et al. claims to be of such a breadth to cover a tool substrate, then the USPTO has already issued overlapping claims in the Mentz et al. patent and U.S. Patent No. 5,881,444 (Schaefer et al.), which is a parent of this application.

Paragraph 5 of the Official Action rejects Applicants' claims 9-14 and 20-21 over Mentz et al. in view of Cowan et al. '571 and/or McGrew '030. Applicants acknowledge the disclosures in Cowan et al. and McGrew of forming relief holograms of a micron or few microns. However, neither patent discloses or suggests Applicants' transfer of a hologram from a shim to a die or print roll that is used to emboss meal articles.

Paragraph 6 of the Action rejects claims 1, 2, 4, 5, 7, 9-16 and 20-21 over Mentz et al. in view of Cowan et al. and/or McGrew combined with Pricone et al. '769. The Pricone et al. patent discloses a method of forming an embossing tool with an optically precise pattern. The patent explains that ruling machines used in forming scribing grooves to provide a ruled master to make a tool for cube-corner sheets are well known in the art. A ruled master 21 or 27 must be used to produce copies which can be grouped together to form larger areas until a tool of the desired dimensions is created. In a first approach, several masters 22, 24 or 26 are assembled as shown in Fig. 6 and an electroformed solid copy is made. In a second approach, a single master is used to generate a mother copy 19 which is then replicated to generate a number of electroplated copies. Figs. 7 to 11 show the steps by which segment copies 55 are generated by placing strips on a mandrel and

placed in an electrodisposition tank to build up the thickness of the electrodisposition. Once a seamless master cylinder 70 is formed, the cylinder can be used to produce similar cylinders by electro-forming. The Pricone et al. patent contains no disclosure or suggestion of a method like Applicants' method in which a holographic shim is pressed against a die member to transfer the holographic image from the shim into the surface of the die.

Paragraph 7 of the Official Action rejects Applicants' claims 1-5, 7-16 and 20-21 under §103(a) over Mentz et al., in view of Cowan et al. and/or McGrew combined with Pricone et al., Smyth '212 and Trivett '956. The Smyth and Trivett patents are cited for their disclosures of using lubricants when stamping aluminum can parts and in metalworking of formed beverage and food containers. Applicants acknowledge those disclosures. However, the elimination of Mentz et al. as a reference means that the combination of references fails to disclose or suggest the important features of Applicants' method in which a holographic shim is used to form a holographic die or pint cylinder.

Paragraph 8 of the Official Action rejects Applicants' claims 1-7, 9-16 and 20-21 under §103(a) over Mentz et al. in view of Cowan et al. and/or McGrew combined with Pricone et al., Smyth, Trivett and Hanehiro et al. which is cited for the disclosure of the use of carbon nitride as the embossing surface of a stamper. The removal of Mentz et al. as a reference means that this rejection also falls short of any disclosure or suggestion of Applicants' technique for forming a holographic die or print cylinder.

Paragraph 9 is another 103(a) rejection and adds Mariotti FR 2747453 and Thibeault et al. '591 to the cited references. Mariotti is cited as teaching the embossing of can parts on both sides, and Thibeault is cited as teaching embossing of can tops on both sides. The removal of Mentz et al. as a reference means that this rejection fails for the same reason as given above.

Paragraph 10 of the Action rejects Applicants' claims 1, 2, 4, 5, 7, 9-16 an 19-21 under §103(a) over Mentz et al. in view of Cowan et al. and/or McGrew combined with Pricone et al, Weitzen et al. '011 and Schmidt '370. Weitzen et al. is cited for the disclosure of embossing thin aluminum foils with holographic patterns without the need for raising the temperature. Schmidt is cited as teaching mandrels that are cantilevered, but supported at both ends. This rejection also fails since the removal of Mentz et al. means

there is an absence of any disclosure or suggestion of Applicants' technique for forming a holographic die or print cylinder.

Paragraph 11 is a §103(a) rejection that, with the removal of Mentz et al., also falls short of any disclosure or suggestion of Applicants' method of forming a holographic die or print cylinder.

Paragraph 12 rejects Applicants' claims 22-25 under §103(a) over Weitzen et al. in view of Mentz et al. and Haiml et al. '572, which is cited for the teaching of embossing of aluminum foil with a sheet of metal backing. The removal of Mentz et al. means that this rejection also falls short.

The nonstatutory double patenting rejection in Paragraphs 13-15 of the Action is overcome by the enclosed Terminal Disclaimer.

In summary, Applicants respectfully submit that the declarations previously submitted, the enclosed Terminal Disclaimer and the above remarks clearly establish patentability of all of Applicants' claims. Accordingly, reconsideration and allowance of the claims is respectfully solicited.

Respectfully submitted,

David V. Radack
Registration No. 33,442
Eckert Seamans Cherin & Mellott, LLC
600 Grant Street, 44th Floor
Pittsburgh, PA 15219
(412) 566-6777
Attorney for Applicants